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R E M A R K S

Applicant has carefully considered the Office Action of October 28, 1998 rejecting all of the claims. The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

The present application is the National Stage of PCT patent application PCT/US96/01209. The amendment is presented in relation to the arrangement of the text which was originally filed with the PCT, not the published version, and this matches the Examiner's comments in para. 5 of the Office Action about page 7 and line numbers. The Abstract originally filed with the PCT application was amended to shorten its length, but it is believed that the original length is in accordance with US regulations, and this original Abstract is submitted herewith, to be entered as text on page 61, attached herewith.

The drawing references noted by the Examiner have been amended to remove inconsistencies with the text, and it is requested that a requirement for formal drawing corrections be held in abeyance until an indication of allowance has been received.

Claims 1, 4, 24 39 and 48 have been amended. New claim 49 has been added. Thus, claims 1-49 remain in the case.

In a conversation with SPE Anthony Knight on April 15, 1999, the undersigned Applicant's attorney noted that the claim amendments which were submitted on March 14, 1997 in response to

the Written Opinion in the PCT case (Art. 34 amendments) were not entered into the present National Stage US application, for some reason.

A copy of the published PCT application with the replacement pages reflecting Art. 34 amendments is attached.

It is respectfully requested that the Examiner review his comments once again, after taking into account the above submitted claim amendments (which were submitted in the PCT per Art. 34), and after taking into account that the present application claims priority from the earlier applications listed, so that a uniform approach can be developed to the various claims presented in those prior applications and the present application.

More specifically, it is respectfully suggested that the Examiner consider the need for providing a new Office Action taking into account the fact that the PCT patent application PCT/US96/01209 was filed for US purposes as a continuation-in-part application, and that some of the claims in the chain of applications recited above in the cross-reference information (amended text) have issued as patents. In addition, it is noted that the Applicant has a pending re-issue proceeding for patent 5,324,086, under re-issue application S/N 08/936,486.

Also attached to this response is a copy of the Art. 34 amendments submitted on March 17, 1997, including claim amendments and arguments regarding cited prior art. The arguments are relevant to the prior art cited by the Examiner in the present Office action, and these arguments are repeated below.

It is the object of the present invention to overcome the problems of existing products exhibiting telescopic movement,

and provide a system of telescopic elements for multiplying the effective physical work achieved by simple hand and leg movements, in controlling the telescopic motion of structures and their length. The invention can be implemented in a very large number of fields including cleaning systems, vacuum cleaners, measuring rods, tools, paint rollers, wall scrapers, mustic stands and instruments, parasols, shades, curtains, sailing boat masts, and structures such as chairs, tripods, tables, tents etc.

As amended, independent claim 1 now includes a limitation indicating that the driving motion of the system is controllably reversible, such that both extension and retraction motions are under full, reversible and multipliable control of the mechanism.

In addition, in claim 1, a limitation on the orientation of the driving motion has been clarified, to indicate that the driving motion is provided in a direction <u>in line</u> with the orientation of the elements. This defines a relationship between the driving and driven motions, such that a linear driving motion provides a linear driven motion, and this is described as linear-to-linear motion.

Claim 1 further includes the limitation that the elements are connectable to a tool or object which is to be used in performing some useful work, such as cleaning, painting, etc.

Thus, as now amended, if a hand motion (as per claim 4) is applied to provide the driving motion between an end of either the first and second elements and the linking means (loop), as in the embodiment of Fig. 1, then one of two types of resulting

extension and retraction motion occurs, either as illustrated in Figs. 2-3, or as Figs. 5-6. The first type of motion is shown in Figs. 2-3 and occurs when tool 100 is held by handle 116 which is attached to the loop, and moved toward handle 114, so that the driven motion is counter to the driving motion of handle 116 with respect to handle 114, and this is claimed in claim 3.

The second type of motion is shown in Figs. 5-6 and occurs when tool 100 is held by handle 126 which is moved away from handle 124, so that the driven motion of the linking means (loop) is in the same direction as the driving motion of handle 126 with respect to handle 124 (claim 2).

The specification refers to this directional feature and its advantages in the description at page 8, last paragraph, beginning with the words "in this activity, the operating hand moves handle 116 in the opposite direction to the motion of segment 106, thus enabling the user to reach greater distances.." The other mention of the directional feature is at page 9, line 3, where the description mentions "the device can be operated in the same direction as the hand motion.." The advantage of this operation is given at the end of the paragraph, line 11, describing this arrangement as "effective for working in lower places". A particular problem is solved by the inventive tool at high and low locations, and it is solved by this unique motion.

Thus, as now amended, the ability to control multipliable driven motion, in both extension and retraction movement, is what gives the present invention an advantage over other telescopic systems.

For example, in Figs. 7-8, there are shown 2-element

arrangements where the driven motion is a controllably multipliable result of the driving motion. If the gears 142, 144 are selected with different diameters, the motion is transferred according to the ratio between them. The same effect is provided using the toothed rail 156 with gear 142, per Fig. 9.

Claim 49 refers to a construction such as that shown in Fig. 54, where a spring force reverses the driving motion.

The Examiner has rejected independent claim 1 and the various groupings of dependent claims under Sec. 102(b) as being anticipated by Pipes and White, and under Sec. 103 as being unpatentable over Pipes, and Pipes in view of Sandberg.

US Patent 4,388,033 to Pipes discloses a shuttle assembly of elements placed alongside one another with chains (66) mounted on sprocket wheels (48, 49 etc.) In contrast, the present invention allows for telescopic motion of nested members, which is impossible with Pipes, since the elements and chains are not nested. The requirement in Pipes for wheels carrying the chains is not a requirement of the invention. Pipes does not lend itself to driving motion provided by hand, nor controllably reversible motion. The present invention allows connection of elements which move together with the the moving members, but Pipes does not allow connection to such elements, except the end shuttle which carries the load. The practical applications are also very different.

Comparison of Fig. 1 of Pipes with Fig. 27b of the present application shows clearly the three member construction, and the difference in the linking means arrangements is visible.

A single loop is used in the present invention, while Pipes uses chains with double the length, to achieve motion of the elements.

There is no disclosure in Pipes of controllably reversible motion in line with the orientation direction, which is provided by the present invention as now claimed by the amendments to independent claim 1. Therefore, Pipes does anticipate the claims under Sec. 102(b).

As stated in the decision in In Re Marshall, 198 USPQ 344 (1978), "To constitute an anticipation, all material elements recited in a claim must be found in one unit of prior art...". Since Pipes neither 1) identically describes the invention nor 2) enables one skilled in the art to practice it, Applicant deems the 102(b) rejection improper, and respectfully requests that it be withdrawn.

US Patent 1,456,478 to White discloses a collapsible structure which employs an arrangement of sprocket wheels and chains to allow telescopic movement of a sectioned structure.

In contrast, the present invention allows for telescopic motion of nested members, which is impossible with White, since the elements and chains are not nested. White does not lend itself to driving motion provided by hand, nor controllably reversible motion. The requirement in White for wheels carrying the chains is not a requirement of the invention.

For example, Figs. 7-9 of the present application show a linking means without chains comprising a single, double-toothed sprocket wheel, which converts the driving motion to a driven motion. Even 76 years after White was published, the practical applications do not exist and are also very different

from those of the present invention.

Thus, as stated above, White does not 1) identically describe the invention nor 2) enable one skilled in the art to practice it, and Applicant deems the 102(b) rejection improper, and respectfully requests that it be withdrawn.

The Examiner has also cited US Patent 326,226 to Sandberg, from the year 1885 to indicate that telescopic systems were known in the prior art. While the general telescopic systems are indeed known, no invention prior to the present one has means for maintaining full, reversible and multipliable control of the extension and retraction motion. Applicant respectfully requests that the Examiner carefully reconsider the scope of the invention, as now claimed, with respect to the limited teaching of the Sandberg reference.

Sandberg teaches a fire escape within which only the extension motion which raises the ladder is controlled, while the retraction motion is not controlled and is provided by gravity. Unlike Sandberg, the present invention allows controllable retraction motion, such that as shown in Figs. 5-6, the retraction motion produces a useful effect in sweeping. Sandberg cannot accomplish this as its retraction motion is gravity-dependent.

Furthermore, the Sandberg reference uses a tilting mechanism to direct its extension motion, while the present invention needs no such mechanism, as illustrated, again for example, by the hand motion used in the sweeper of Figs. 5-6. The extendable elements of Sandberg can only move within one another,

while the present invention allows for motion of elements one alongside the nother, such as in the curtain opening and closing application, see Fig. 44b.

The provision by the present invention of a tool attached to a system providing controllably reversible driving motion in-line with the orientation of the elements, and a controllably reversible driven motion, is deemed not to have been obvious since the teaching of Pipes, White and Sandberg do not disclose this, nor do they disclose a tool for performing work.

In making the combination of references proposed by the Examiner, the question is raised whether the references themselves would suggest doing so, as stated in the decision of In Re Lintner (172 USPQ 560, 562, CCPA 1972):

> "In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification."

Similarly, In Re Regel (188 USPQ 136 CCPA 1975) decided that the question raised under Sec. 103 is whether the prior art taken as a whole would suggest the claimed invention to one of ordinary skill in the art. Accordingly, even if all the elements of a claim are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill would have been prompted to combine the teachings of the references to arrive at the claimed invention.

Simply put, and as stated in In re Clinton (188 USPQ

365 CCPA 1976), "do the references themselves ... suggest doing what appellants have done", such that there is a requirement that the prior art must have made any proposed modification or changes in the prior art obvious to do, rather than obvious to try.

It is respectfully put forward by Applicant that there is not any substantial reason to view the combination of references as obvious, since none of them suggests controllably reversible motion in-line with the member orientation, as provided by the invention. To say that a such a combination is obvious to try, as the Examiner seems to do, is one thing, but to recognize the above-outlined design advantages is another thing.

Therefore, independent claim 1 is deemed to be patentable over the prior art, and the dependent claims are likewise deemed patentable being based thereon.

In view of the foregoing amendments and remarks, all of the claims remaining in the application are deemed to be allowable. Further reconsideration and allowance of the application is respectfully requested at an early date.

Respectfully submitted,

Edward Langer, Attorney
Reg. No. 30,564

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OF COUNSEL
HENRY R. LERNER

March 14, 1997

VIA EXPRESS MAIL

Assistant Commissioner for Patents
Washington, DC 20231
BOX PCT

ATTN: IPEA/US

Re: International Application No.: PCT/US96/01209
International Filing Date: 31 January 1996
Applicant: Mordechai Hammer
Our File No.: 2036.018PCT

Dear Sir:

In response to the Written Opinion dated January 16, 1997, Applicant submits herewith replacement Pages 55 and 64 of the claims. The specific amendments to the claims are discussed below in the Remarks section of this letter. Applicant also submits its replacement pages for drawing Figures 7, 14, 15a, 15b, 21, 23, 27a, 27b, 29, 31b, 32, 35b, 37 and 54. A description of the specific amendments to the drawings appears immediately below. Applicant respectfully requests that the IPEA take these amendments and the Remarks section of this letter into account in the examination of this application.

AMENDMENTS TO THE DRAWINGS

Figs. 1- 6 - No changes were made.

Fig. 7 - The additional side view which was added with the previous submittal of amended drawings filed June 3, 1996, has been removed.

Fig. 8 -13 - No changes were made.

Fig. 14 - Numeral 180 refers to both screws, and connection point 182 on loop 118 has been corrected.

Fig. 15a, 15b - Numeral 182 has been corrected to refer to the connection point on loop 118, and numeral 180 added as a screw, as shown in Fig. 14, so it is not new matter.

Figs. 16 - 20 - No changes were made.

Fig. 21 - Handle 114 was added, as is shown in original Fig. 22. The previous submittal of amended drawings (filed June 3, 1996) was amended to remove handle 116 as it was an error.

Fig. 22 - No changes were made.

Fig. 23 - Perspective view replaces front view, and sleeves 215 and 224 were removed for clarity as they are shown in Figs. 21-22.

Figs. 24 - 26 - No change was made.

Figs. 27a, 27b - These are shown in perspective view, no other changes.

Fig. 28 - No change was made.

Fig. 29 - Connecting lines were added to parts 106, 108, 118, 292 per the original drawing - no other changes.

Fig. 30, 31a - No changes were made.

Figs. 31b, 32 - The additional views which were added with the previous submittal of amended drawings (filed June 3, 1996) have been removed. No other changes.

Figs. 33a-c, 34 - No changes were made.

Figs. 35a and 36 - No changes were made.

Fig. 35b - The additional view which was added with the previous submittal of amended drawings (filed June 3, 1996) has been removed, and Fig. 35c has been renumbered as 35b.

Fig. 36 - No change was made.

Fig. 37 - The numbers were removed since Figs. 34 - 35 explain them, and arrows added to clarify the movements of the parts.

Figs. 38, 39, 40a-b, 41 - No changes were made.

Fig. 42 - Slight changes to umbrella outline added for clarity.

Fig. 43-48 - No changes were made.

Figs. 49, 50 - Slight changes adding numerals clarifying text description.

Figs. 51, 52 - No changes were made.

Fig. 53 - Direction of view reversed.

Fig. 54 - Correction adding loop 118 in accordance with text, per Figs. 10-15.

Figs. 55 - 57 - No changes were made.

REMARKS

Applicant has submitted replacement pages 55 and 64, replacing claims 1 and 48 of the original application. This amended claim is presented in response to the International Preliminary Examining Authority's Written Opinion which was mailed on 16 January 1997. Independent claim 1 has been rewritten, and the remaining claims have been retained. Claim 48 has also been amended in response to the Written Opinion.

The claims as now presented, patentably define over the prior art of record. Specifically, independent claim 1 now includes a limitation indicating that the

driving motion of the system is controllably reversible, such that both extension and retraction motions are under full, reversible and multipliable control of the mechanism.

In addition, in claim 1, a limitation on the orientation of the driving motion has been clarified, to indicate that the driving motion is provided in a direction in line with the orientation of the elements. This defines a relationship between the driving and driven motions, such that a linear driving motion provides a linear driven motion, and this is described as linear-to-linear motion.

Thus, as now amended, if a hand motion (as per claim 4) is applied to provide the driving motion between the linking means (loop) and either of the first and second elements, as in the embodiment of Fig. 1, the extension and retraction motion is as illustrated in Figs. 2-3, and 5-6. The ability to control multipliable driven motion, in both extension and retraction movement, is what gives the present invention an advantage over other telescopic systems.

For example, in Figs. 7-8 there are shown 2-element arrangements where the driven motion is a controllably multipliable result of the driving motion. If the gears 142, 144 are selected with different diameters, the motion is transferred according to the ratio between them. The same effect is provided using the toothed rail 156 with gear 142, per Fig. 9.

Applicant notes that the IPEA has not considered the replacement description, claims and drawings filed by the Applicant as amendments under Article 34 in drawing up the Written Opinion. Applicant requests that the IPEA now consider the amendments filed on 22 October 1996, together with the amendments submitted herewith.

The IPEA has relied on the Sandberg reference, U.S. Patent No. 326,336 from the year 1885 to indicate that telescopic systems were known in the prior art. While the general telescopic systems are indeed known, no invention prior to the present one has means for maintaining full, reversible and multipliable control of the extension and retraction motion. Applicant respectfully requests that the IPEA carefully reconsider the scope of the invention, as now claimed, with respect to the limited teaching of the Sandberg reference.

Sandberg teaches a fire escape within which only the extension motion which raises the ladder is controlled, while the retraction motion is not controlled and is provided by gravity. Unlike Sandberg, the present invention allows controllable retraction motion such that as shown in Figs. 5-6, the retraction motion provides a useful effect in sweeping. Sandberg cannot accomplish this as its retraction motion is gravity-dependent.

Furthermore, the Sandberg reference uses a tilting mechanism to direct the extension motion, while the present invention needs no such mechanism, as illustrated, again for example, by the hand motion used in the sweeper of Figs. 5-6. The extendable elements of Sandberg can only move one within the other, while the present invention allows for motion of elements one alongside the other, such as in the curtain opening and closing application, see Fig. 44b.

The Bradford reference, U.S. Patent No. 399,313 cited by the Examiner adds nothing to the teachings of Sandberg, as regards the issue of reversible control over the motion, since it too cannot be reversed under control, but relies on gravity to collapse the ladder.

The Steidle reference, U.S. Patent No. 1,325,053 adds nothing as regards reversible motion.

The Metz reference, U.S. Patent No. 198,465 adds nothing as regards reversible motion.

The White reference, U.S. Patent No. 1,456,478 does not resemble the mechanism of the present invention.

The Van Fleet reference, U.S. Patent No. 2,795,050 does not resemble the mechanism of the present invention.

The Wu reference, U.S. Patent No. 5,267,583 does not disclose the same mechanism as the present invention.

The Sargent reference, U.S. Patent No. 4,779,650 does not disclose the same mechanism as the present invention.

The Shen reference, U.S. Patent No. 5,267,712 does not disclose the same mechanism as the present invention. To open the camera stand disclosed therein, each individual segment of the legs must be released and extended individually, while the present invention accomplishes this automatically at once. As shown in Figs. 33-37, the main cylinder 354 and sleeve 360 operate to open or close all of the legs with a single motion.

The Andrews reference, U.S. Patent No. 5,037,057 does not disclose the same mechanism as the present invention.

The Bernardi reference, U.S. Patent No. 4,068,673 does not disclose the same mechanism as the present invention.

The Musto reference, U.S. Patent No. 3,076,263 does not disclose the same mechanism as the present invention.

The Pipes reference, U.S. Patent No. 4,388,033 does not disclose the same mechanism as the present invention. Further, the system shown by Pipes can only operate if the elements are side-by-side, and not within the other, unlike the present invention.

The Schreiber reference, German Patent No. 3630346 does not disclose the same mechanism as the present invention.

The Suchy reference, German Patent No. 258,819 does not disclose the same mechanism as the present invention.

The Kmieliauskas reference, U.S. Patent No. 2,546,452 does not disclose the same mechanism as the present invention.

The Badger reference, U.S. Patent No. 1,277,285 does not disclose the same mechanism as the present invention.

The Gibson reference, U.S. Patent No. 678,827 does not disclose the same mechanism as the present invention.

The Katzinger reference, U.K. Patent No. 535,315 does not disclose the same mechanism as the present invention.

The Huang reference, U.S. Patent No. 5,493,480 does not disclose the same mechanism as the present invention.

The Lombardi reference, U.S. Patent No. 4,606,525 does not disclose the same mechanism as the present invention.

The Schweda reference, U.S. Patent No. 2,776,168 does not disclose the same mechanism as the present invention.

It should be noted that in all of the prior art telescopic devices, the element which extends the farthest is the one to which anything is attached, or the one which operates anything, whereas in the present invention, each extendable/retractable element can have something attached to it (for example, the folds of the umbrella shown in Fig. 43), and this is how most of the applications of the claimed device operate.

Based upon the claimed invention and in view of the limited teachings of the prior art of record, it is respectfully submitted that the present application is in a condition for allowance. Prompt and favorable action toward that end is earnestly solicited and believed to be fully warranted.

Respectfully yours,

LEVISOHN, LERNER, BERGER & LANGSAM

Andrew S. Langsam

ASL:aml
Enclosure

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as EXPRESS MAIL receipt no. EM439800524US, postage prepaid, in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231 on March 14, 1997.

Ann Marie LoScalzo
Mailing Date: March 14, 1997

WHAT IS CLAIMED IS:

1. A motion transmission and multiplication system comprising:

at least first and second elements extending in the same orientation; and

at least a first means linking said first and second elements and being movable with respect to at least one of them,

said first linking means being arranged on said first element such that when said first linking means is provided with a controllably reversible driving motion in a direction in line with said orientation, said first and second elements are provided with a controllably reversible and multipliable driven motion with respect to each other.

2. The system of claim 1 wherein said driving motion is in the same direction as said driven motion of said second element.

3. The system of claim 1 wherein said driving motion is in the opposite direction of said driven motion of said second element.

4. The system of claim 1 wherein said driving motion is provided by hand motion of said linking means with respect to an end of either of said first and second elements.

47. The system of claim 1 adapted for use as an assembly toy.

48. The system of claim 1 wherein either of said first and second elements has mounted at an end thereof a surface for supporting at least one of a tool, an electrical device, a device for telecommunications, control, home entertainment and the like, with flexible wiring, cable, tubes and the like, being extendible and retractable during motion of said first and second elements, at least one of said first and second elements being supported in a room to enable positioning of said surface at a desired position.

FIG 29

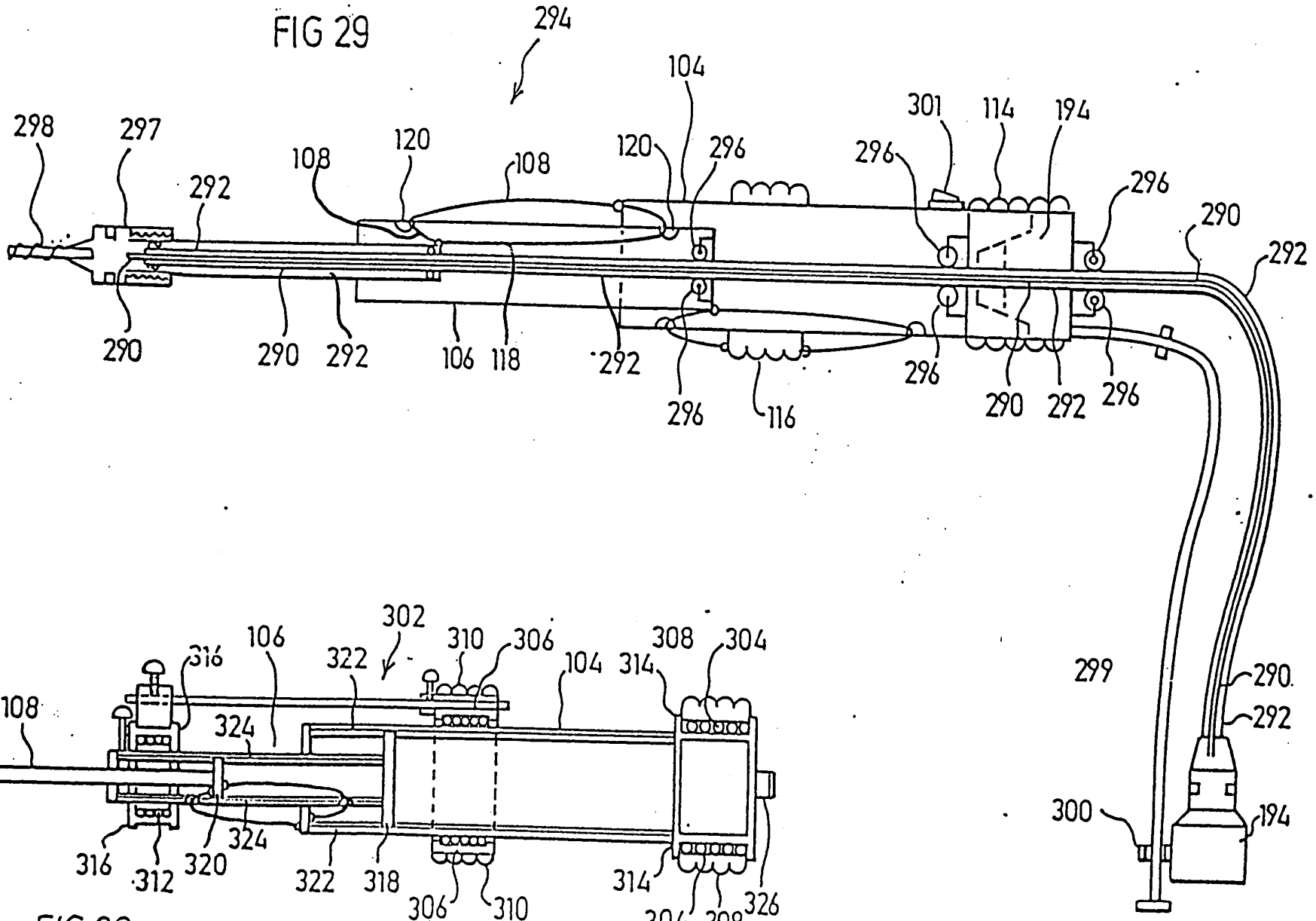
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FIG 30

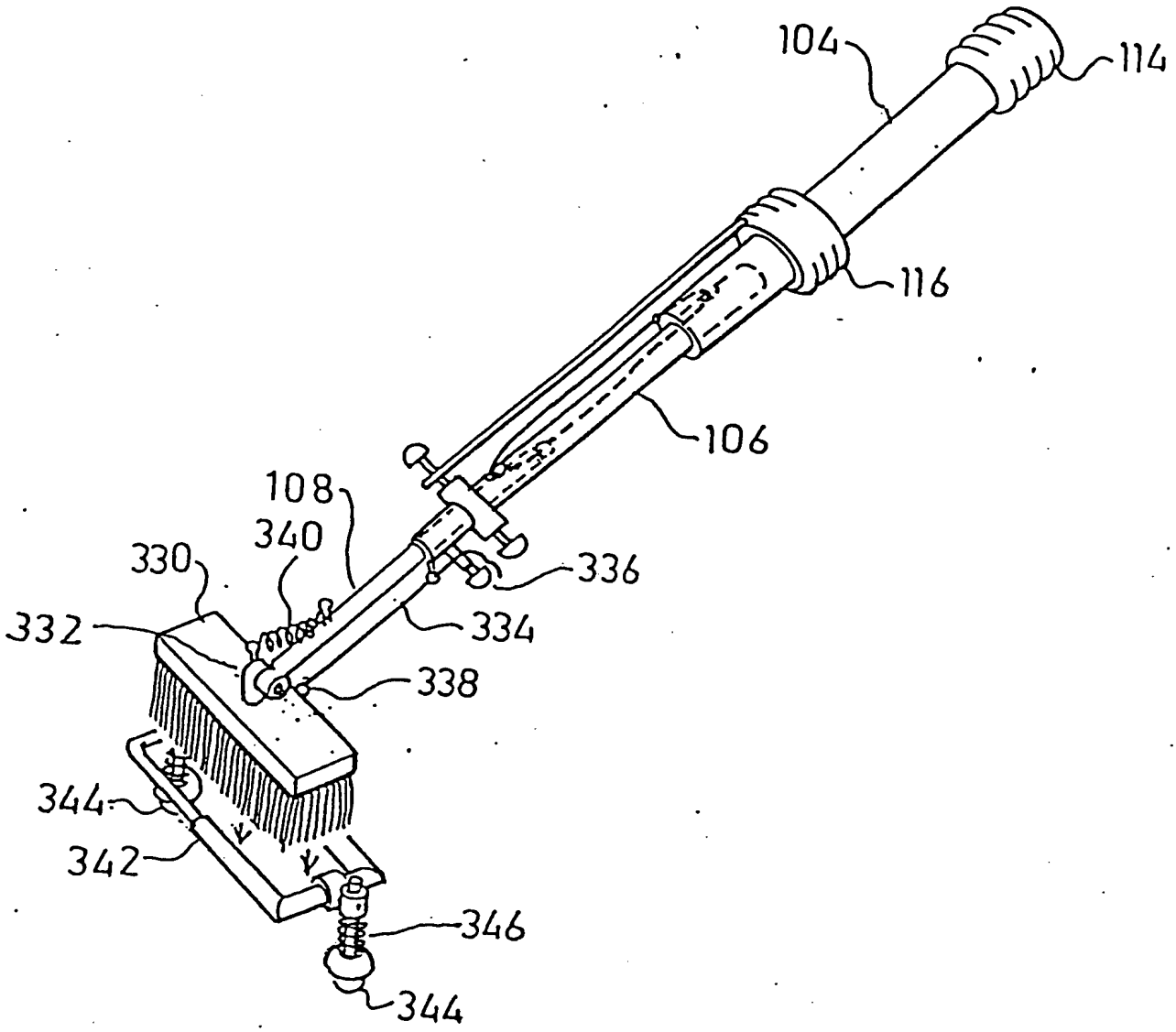
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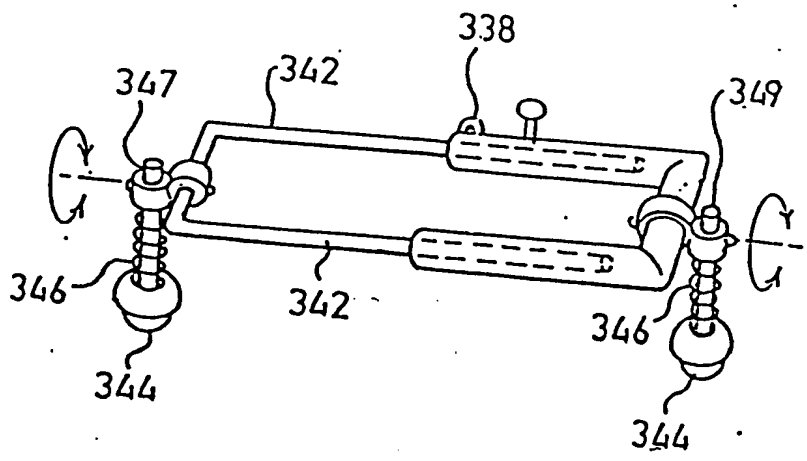
FIG 31a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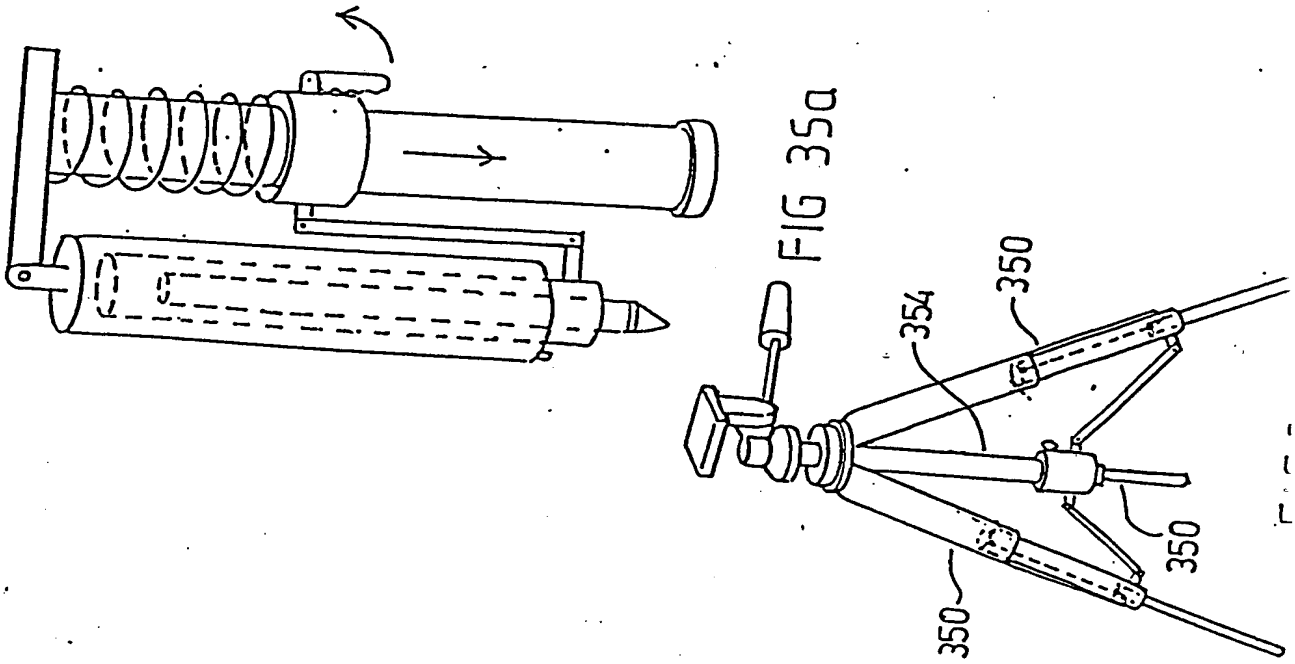


FIG 35a

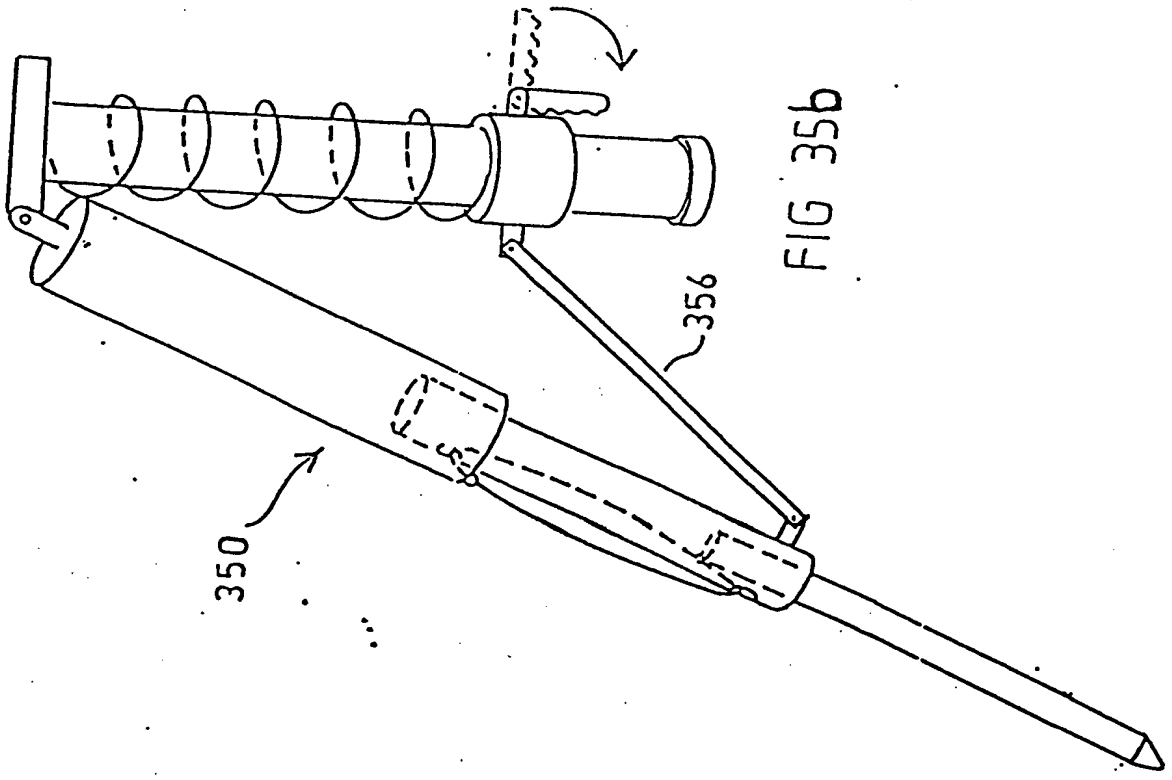


FIG 35b

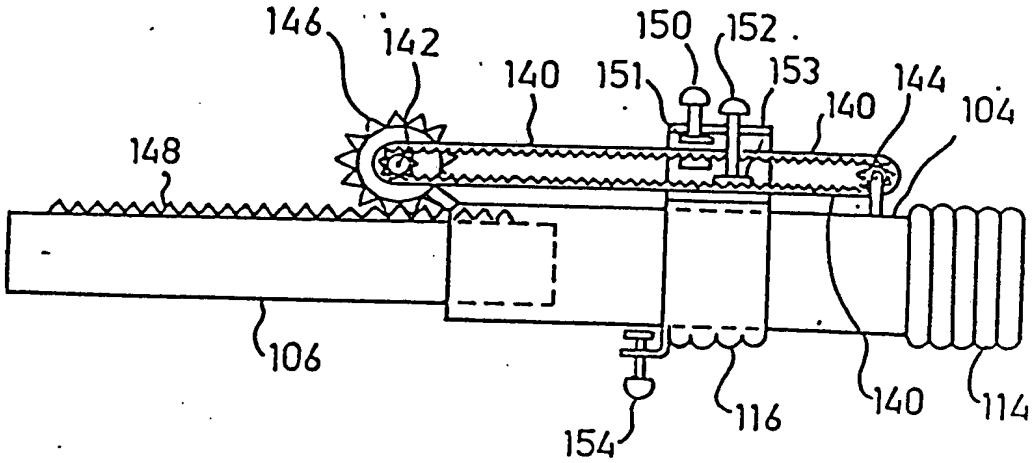


FIG 7

FIG.8

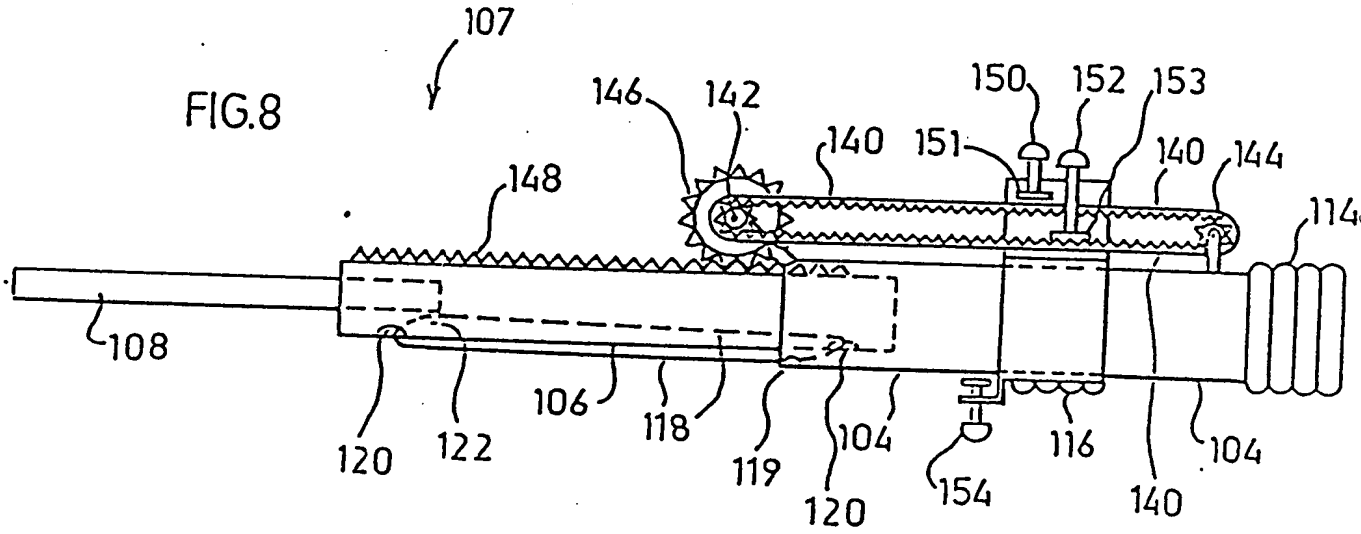
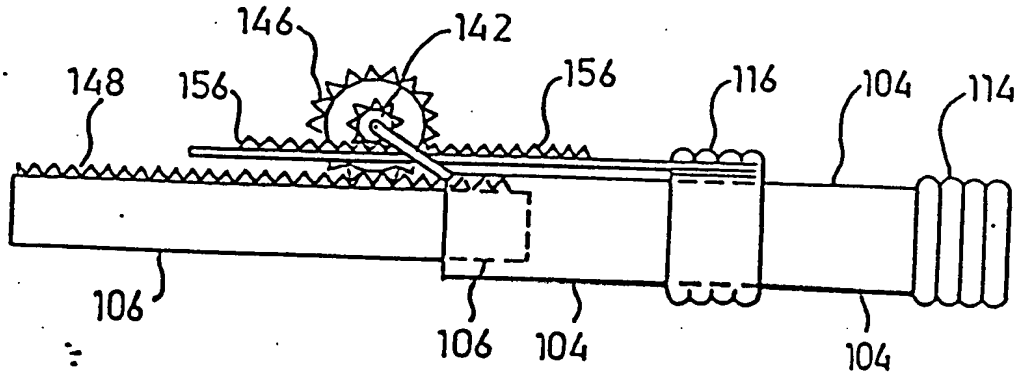


FIG.9



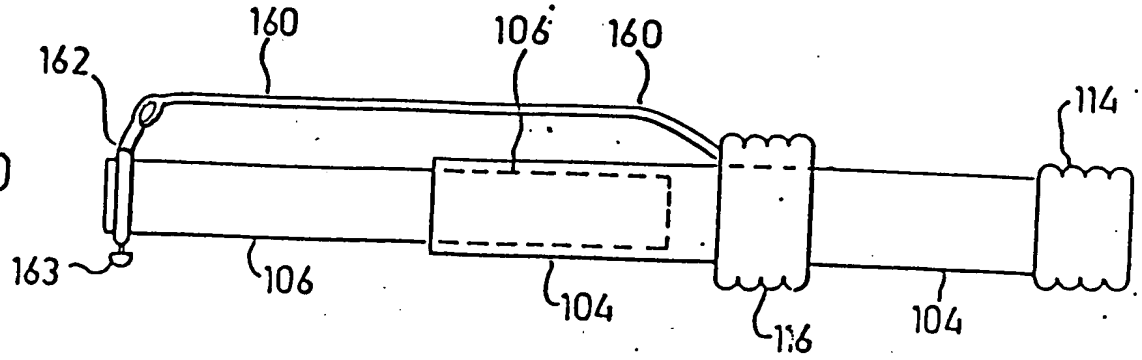


FIG 10

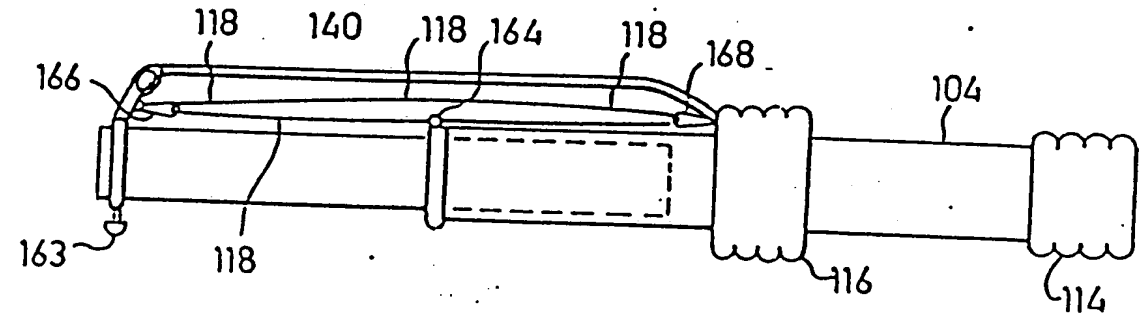


FIG 11

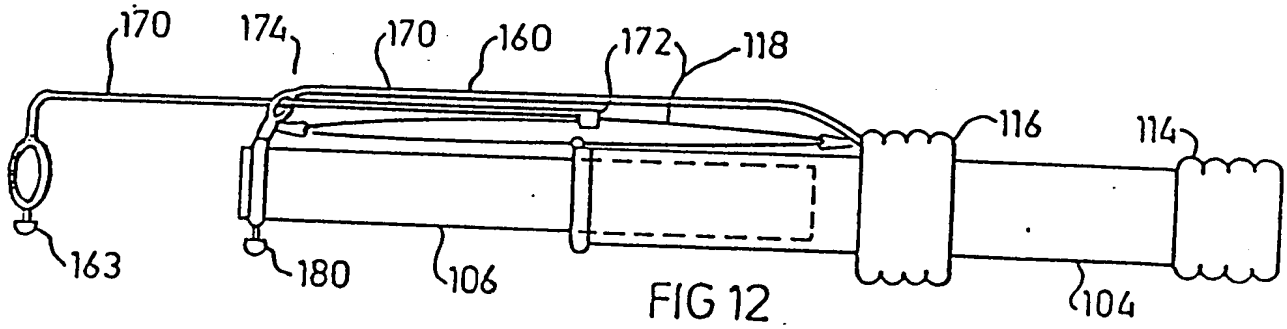


FIG 12

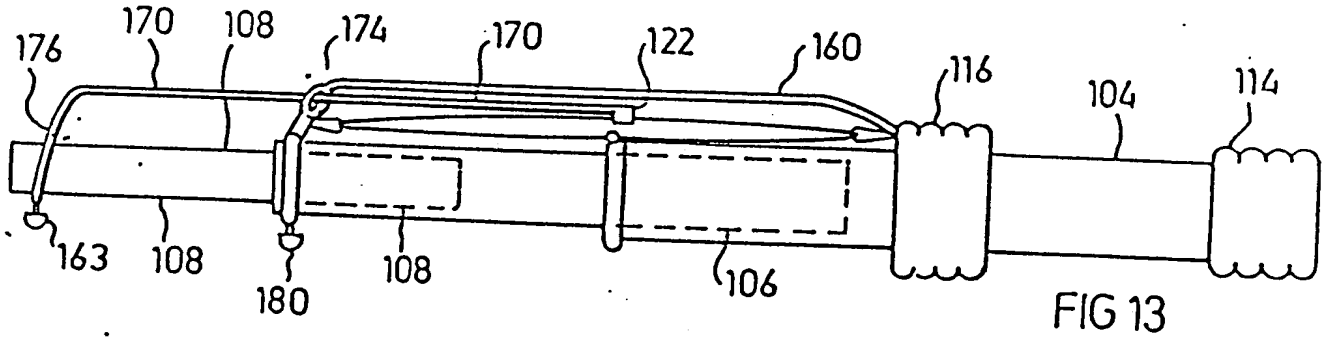


FIG 13

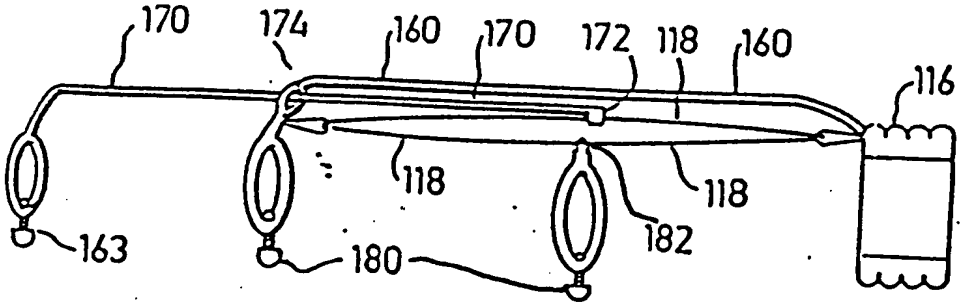
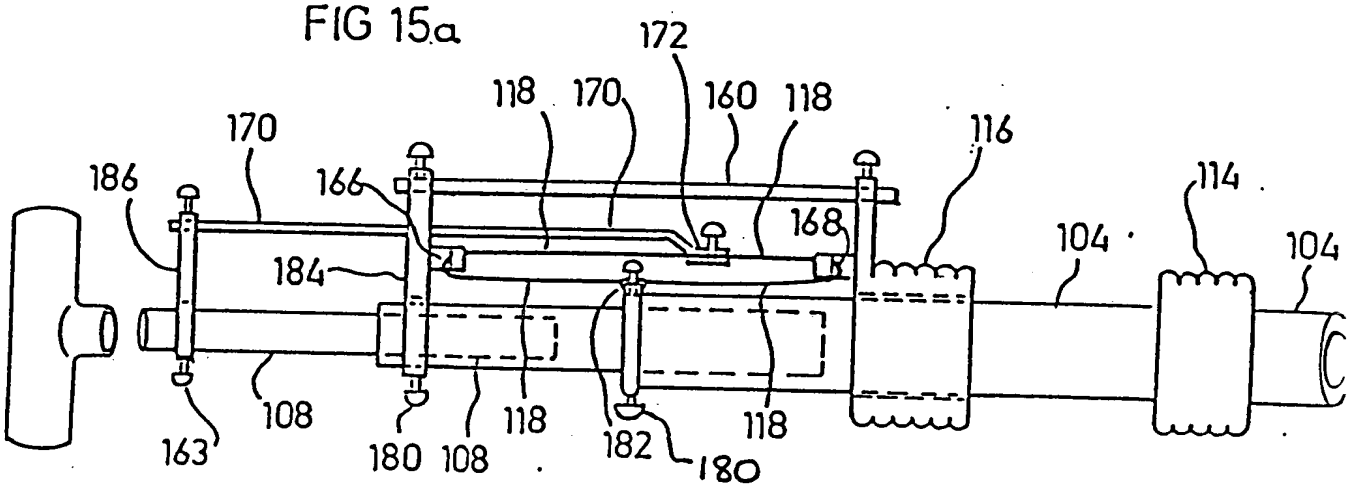


FIG 14

FIG 15a



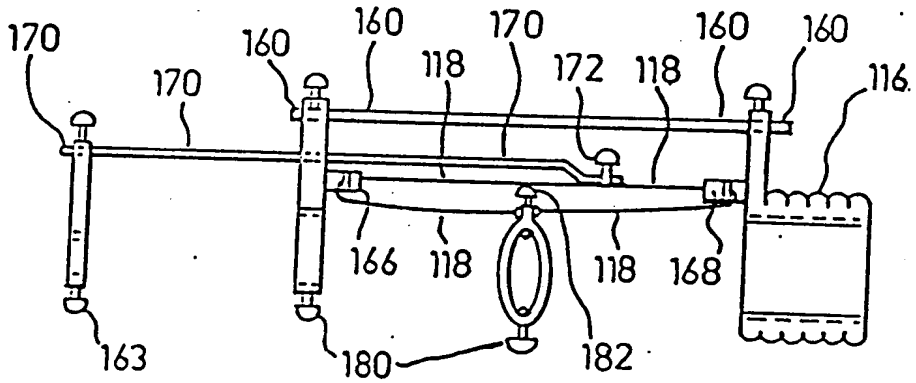


FIG 15b

FIG 21

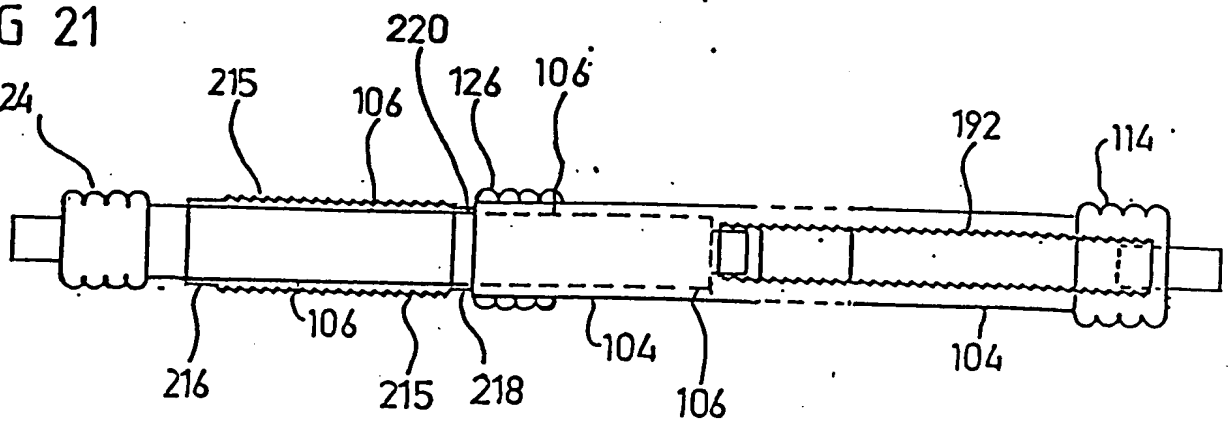
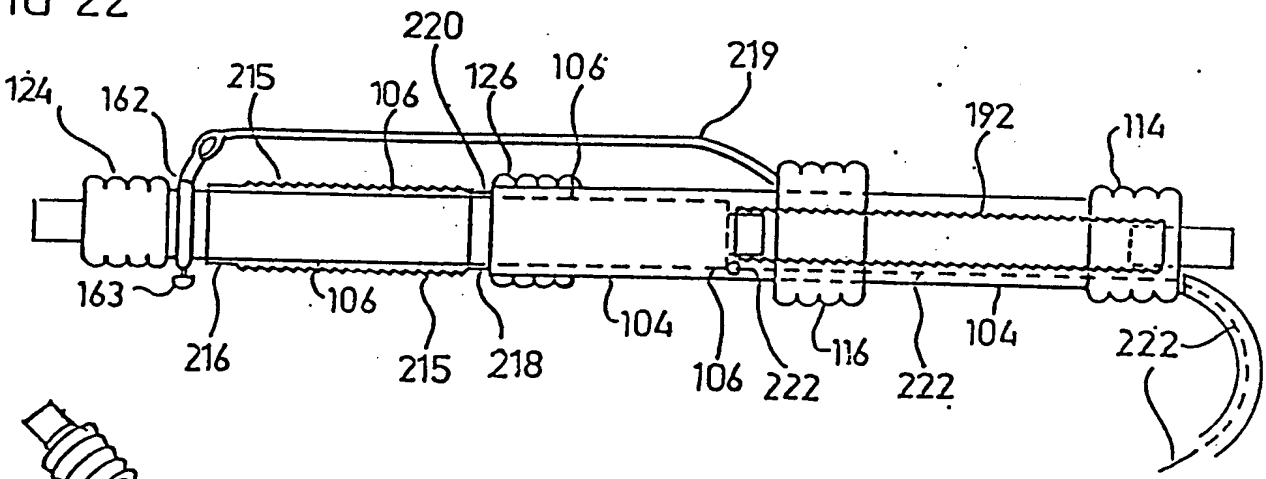


FIG 22



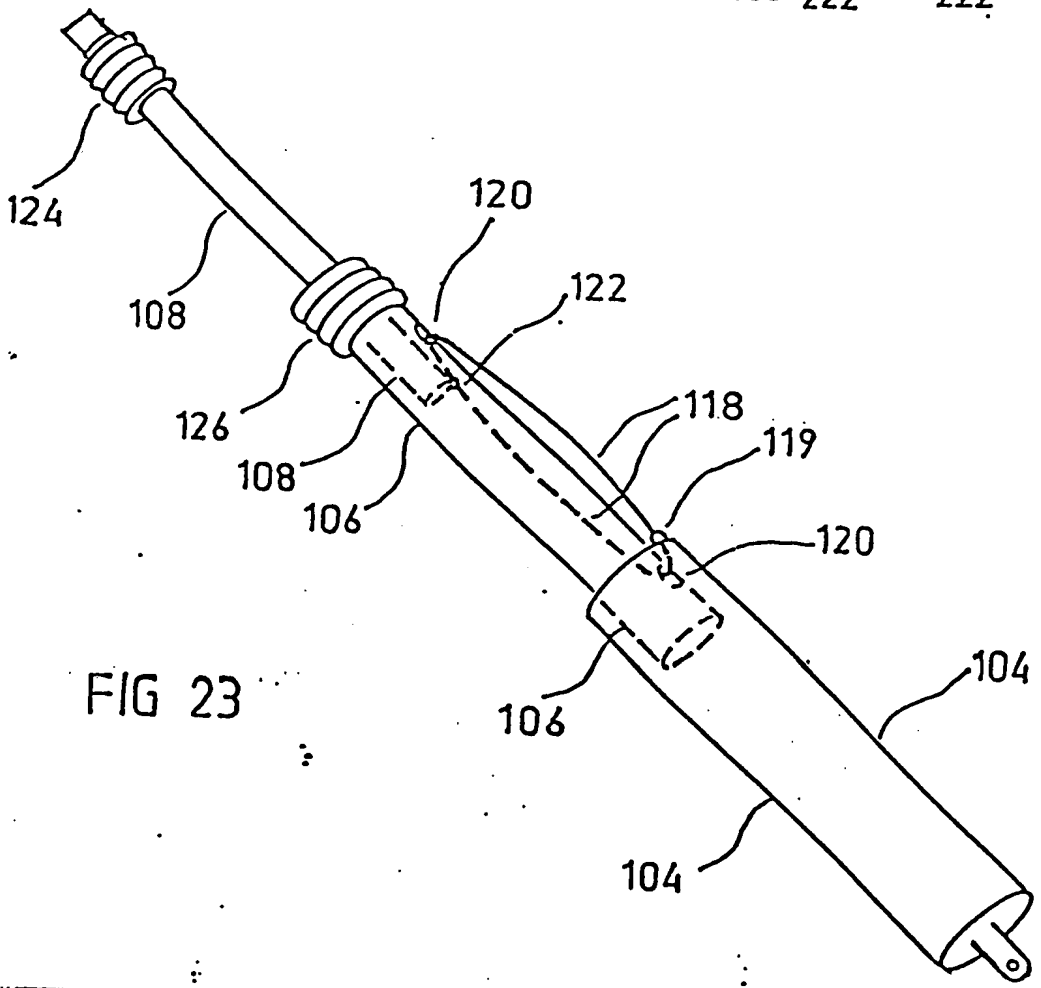


FIG 23